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United States
Department of
Agriculture

Soil
Conservation
Service

Portland,
Oregon

Water Supply Outlook for Oregon

as of OCTOBER 1, 1981

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SNOW SURVEYORS MAKING SPECIAL MEASUREMENTS OF THE SNOWPACK NEAR MT. ST. HELENS VOLCANO, WASHINGTON, APRIL 1980.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W, Calgary, Alberta T3C 1A6.

U. S. DEPARTMENT of AGRICULTURE
CONSERVATION OF WATER BEGINS WITH THE SNOW SURVEY
SOIL CONSERVATION SERVICE

☆GPO 796-122

WATER SUPPLY OUTLOOK FOR OREGON

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued

OCTOBER 1, 1981

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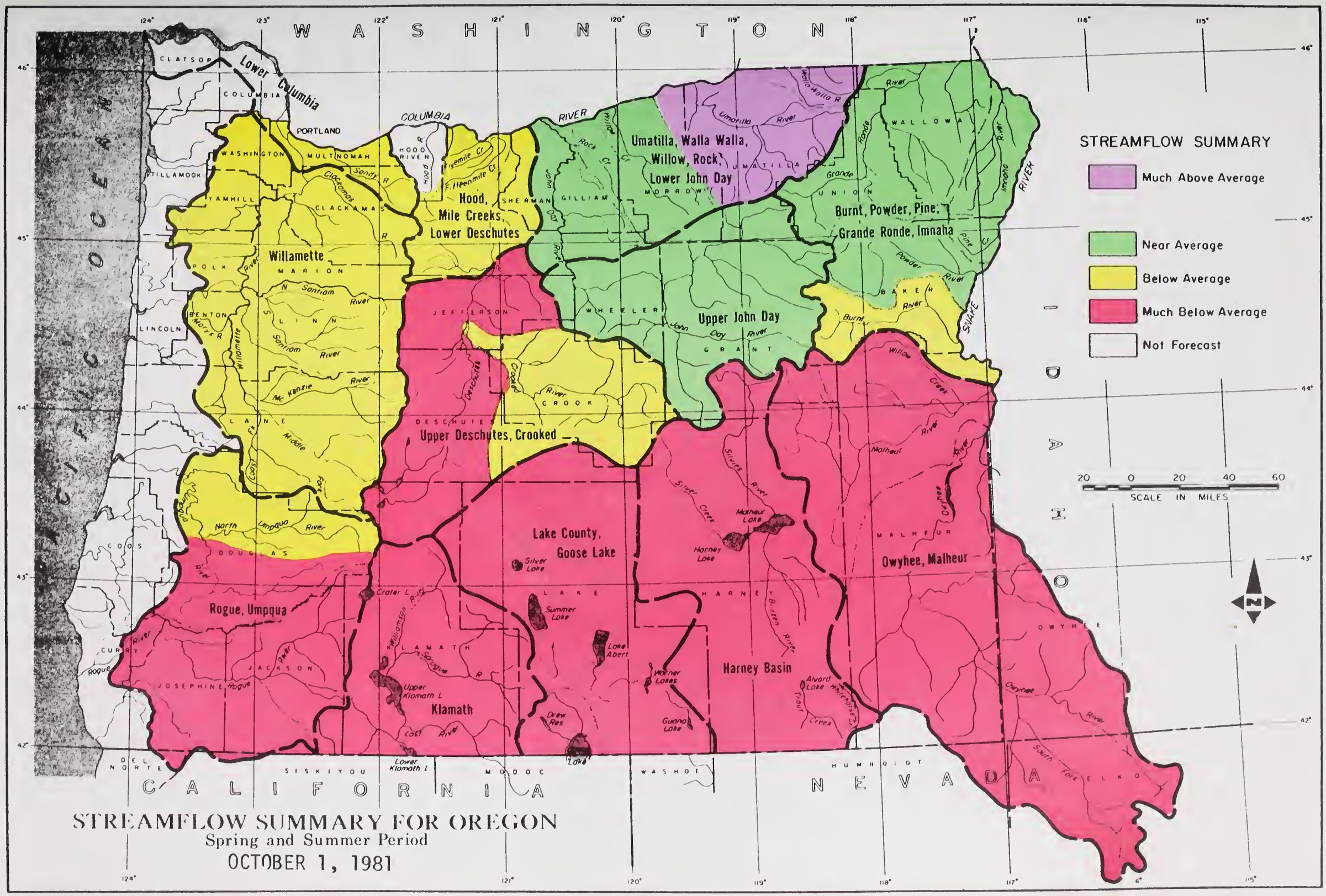


STREAMFLOW SUMMARY FOR OREGON

Spring and Summer Period

OCTOBER 1, 1981

U S DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

WATER SUPPLY OUTLOOK AND SUMMARY

FOR OREGON

OCTOBER 1, 1981

Water users in the north half of the state experienced adequate supplies this summer. Users in southern Oregon dependent on direct diversion suffered from inadequate supplies. In some cases only half enough water was available. Users with access to stored supplies had sufficient water. May and June rains helped considerably and turned a very dismal forecast into a much better than expected situation. Water supplies were worst in Douglas, Josephine, Jackson, Deschutes, Klamath, Lake and Harney counties. Many of the main reservoirs are now at very low levels due to heavy use this past summer.

RESERVOIR STORAGE

Many principal irrigation reservoirs have been drawn down to extremely low levels. Some are at the lowest levels of recent years. Twenty-five reservoirs are currently storing 918,700 acre feet. This is 29% of capacity and 62% of average for October 1. Heavy fall and winter rains are needed to bring these reservoirs up to normal levels.

STREAMFLOW

Streamflow in the north ½ of the state was much better than forecast due to a wet, cool spring. June rains were much above average. These rains did not affect streamflow in southern Oregon and streams there produced water amounts pretty much as forecast.

Representative streamflows for this summer as a percent of average versus the April 1 forecasts are as follows:

	Period	Observed Flow	April 1 Forecast
Owyhee net Inflow	April-July	39%	38%
Grande Ronde nr. LaGrande	April-July	101%	69%
Middle Fk. of Willamette near Oakridge	April-July	88%	63%
Rogue at Raygold	April-July	55%	45%
Upper Klamath Lake	April-July	46%	48%

-more-

Summary continued -

Following is a summary of water supply conditions as reported by counties:

NORTHWEST OREGON COUNTIES

Tillamook - The water supply was adequate for needs throughout the county. June rains kept streamflows at good levels and helped produce good forage for the summer.

Clatsop - There were no water supply problems this past summer in the county.

Columbia - Adequate water was available for all needs.

Marion - 67,000 acres were effectively irrigated with a normal supply of water.

SOUTHWEST OREGON COUNTIES

Douglas - Severe water shortages occurred in the South Umpqua basin. Half of the irrigated acres on the South Umpqua were affected by lack of water. The South Umpqua dropped to below the 1958 minimum flow on August 17. Cow Creek, Calapooga and Elk Creeks were all regulated for minimum flows.

Lane - Less than normal irrigation water was available but due to good management less water was needed and used.

Coos - Average to above average water supplies were available. Heavy fogs and cool weather during the summer kept the need lower than usual and thus made more water available.

Curry - Average to above average water supplies were available. Spring rains helped and forage production was good in most areas of the county.

Josephine - Late season water shortages occurred on lands dependent on direct diversion. By August about ½ of these lands were being affected by short supplies. Many of the small tributary streams went dry by mid-July. Approximately 400 of the 700 water rights for domestic and stock water were adversely affected by drought conditions. Lands with stored water available were adequately irrigated. Grants Pass Irrigation district had 2000 acres with insufficient water.

Jackson - There was 70% to 90% of normal water supplies available for lands with access to stored supplies. Reservoirs have been drawn down to much below normal levels as of October 1. Lands irrigated from direct diversion were short of water.

-more-

Summary continued -

Benton - Approximately 23,000 acres were irrigated with adequate supplies.

CENTRAL OREGON COUNTIES

Jefferson - North Unit Irrigation District had sufficient water supplies.

Hood River - Most acres had adequate water. June rains helped considerably. The Middle Fork Irrigation District had about an 80% supply of water.

Deschutes - Water supplies were 50 to 65% of normal in much of the county. Districts with very early rights had sufficient water. Both Arnold and Tumalo Districts rotated water users to make the supplies stretch further. Reservoirs on the Upper Deschutes have been drawn down to much below average levels as of October 1.

Sherman - June rains and cool temperatures helped to provide sufficient water to all acres in the county.

Wasco - 1981 was generally a good water year. Heavy spring rainfall helped to provide adequate supplies for irrigation. 75% of normal irrigation water was available.

Klamath - Lands with access to stored water had sufficient supplies. Those dependent on direct diversion were short of water. In some cases very short. Reservoirs have been drawn down to some of the lowest levels in recent years.

Crook - Water users with access to stored water supplies had adequate water. Upper Crooked River had about 80% of its water needs. June rains helped considerably.

Lake - Lakeview Water Users, Inc., water users were allotted full shares this past season. There is virtually no carryover for next year. Some shortages were experienced by Silver Lake users. Again spring rains helped very much. Grazing routines were interrupted due to problems with stock water.

Harney - Less than normal supplies were experienced throughout the county.

EASTERN OREGON COUNTIES

Grant - Due to above average rainfall in June, early season water supplies were abundant. A dry summer caused water cutoff on 1500 acres on the main John Day above Mt. Vernon. Most other areas had adequate water.

-more-

Summary continued -

Pendleton - June rains were plentiful and contributed to the normal to above water supplies this past summer. Record crops were produced in the county.

Wheeler - A near average water supply was experienced in the county.

Malheur - Heavy spring rains made the water year near normal. All reservoirs had sufficient water except for Antelope where some 8,000 acres were out of water August 1. Some shortages occurred in the southern end of the county.

Morrow - Normal supplies of water were available. Creek flows were good early in the season due to spring rains.

Baker - 120,000 acres of irrigated land received adequate water this year. May and June rainfall helped the situation.

Union - Streamflow was high early in the season due to the May and June rains. Shortages of water occurred later in the season on the lower Grande Ronde and Catherine Creek. Water rights after 1900 were cut off in August. Willow Creek also had inadequate water.

Wallowa - Above average rain in May, June and July helped provide adequate water throughout the county. No shortages of irrigation water were experienced.

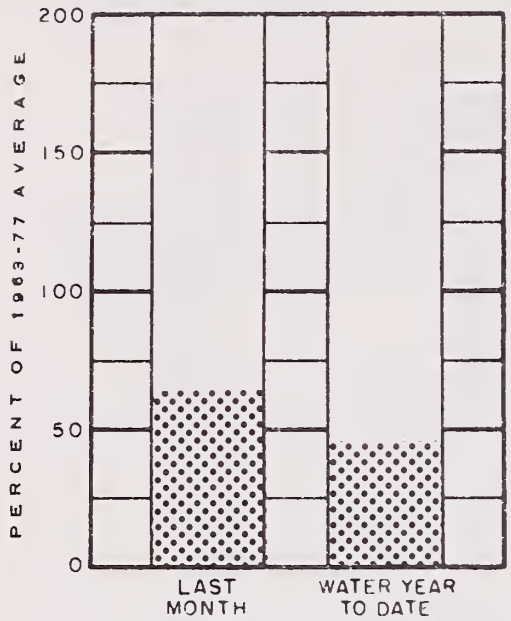
This report contains data furnished by the Oregon Department of Water Resources, U.S. Geological Survey, NOAA National Weather Service and other cooperators.

STATUS OF RESERVOIR STORAGE, OCTOBER 1, 1981

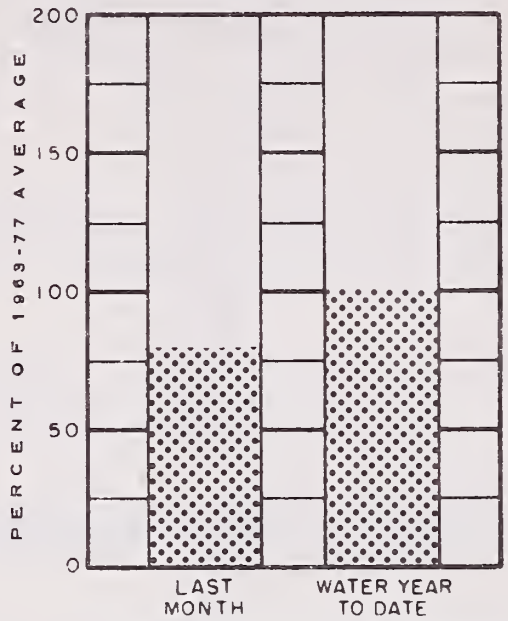
RESERVOIR	USABLE CAPACITY (Thous. A.F.)	THOUSANDS ACRE FEET IN STORAGE ABOUT OCT. 1 1981	1980	15-Year Average 1963-77
		UPPER COLUMBIA DRAINAGE		
Owyhee	715.0	275.2	480.6	378.9
Beulah Reservoir	60.0	16.7	5.9	9.0
Bully Creek	30.0	9.2	11.5	6.7
Warmsprings	191.0	71.5	118.3	61.3
Phillips Lake	73.5	38.4	46.4	36.5
Unity	25.2	5.2	11.4	3.0
Thief Valley	17.4	4.0	N/R	4.6
Wallowa Lake	37.5	11.9	13.2	15.2
Wolf Creek	10.4	1.7	4.8	--
		LOWER COLUMBIA DRAINAGE		
Cold Springs	50.0	4.4	4.1	3.2
McKay	73.8	17.4	17.5	9.8
Ochoco	47.5	24.8	27.2	16.7
Prineville	153.0	100.0	105.3	95.3
Crane Prairie	55.3	11.2	9.7	21.3
Crescent Lake	86.9	10.7	13.2	45.1
Wickiup	200.0	22.7	29.0	61.3
Clear Lake (Wasco)	11.9	N/R	N/R	2.6
Blue River	85.6	14.5	14.5	17.4
Cottage Grove	30.0	13.1	11.9	6.7
Cougar	155.2	67.3	66.4	84.1
Detroit	299.9	146.4	134.1	179.4
Dorena	70.5	34.1	36.6	18.7
Fall Creek	115.0	67.1	56.2	31.2
Fern Ridge	94.2	77.1	75.8	62.4
Foster	30.0	25.9	24.8	23.2
Green Peter	270.0	155.5	252.6	116.0
Hills Creek	200.0	55.2	84.1	102.5
Lookout Point	337.2	178.0	204.2	202.4
Timothy Lake	61.7	59.0	56.2	61.0
Henry Hagg Lake	53.0	29.3	30.7	--
		WEST COAST DRAINAGE		
Applegate	75.2	12.9	--	--
Fourmile Lake	16.1	0	3.4	6.8
Fish Lake	8.0	0.8	3.0	3.8
Howard Prairie	60.0	29.9	49.6	43.3
Hyatt Prairie	16.1	7.7	10.2	9.8
Emigrant Lake	39.0	1.3	11.6	7.7
Lost Creek	315.0	119.6	151.3	--
Upper Klamath	584.0	97.3	218.2	332.4
Gerber	94.0	7.0	26.8	38.0
Clear Lake	440.2	95.9	153.2	206.0
Cottonwood	8.7	0.5	1.9	0.6
Drews	63.0	7.1	49.1	29.4
Thompson Valley	19.5	0.4	N/R	--

CURRENT OREGON STREAMFLOW

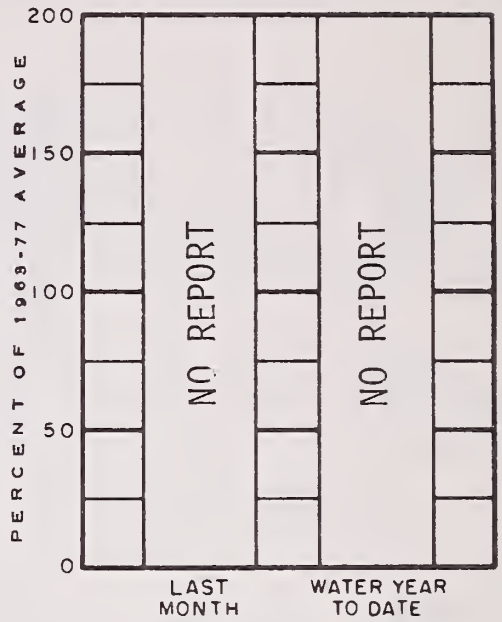
OCTOBER 1, 1981



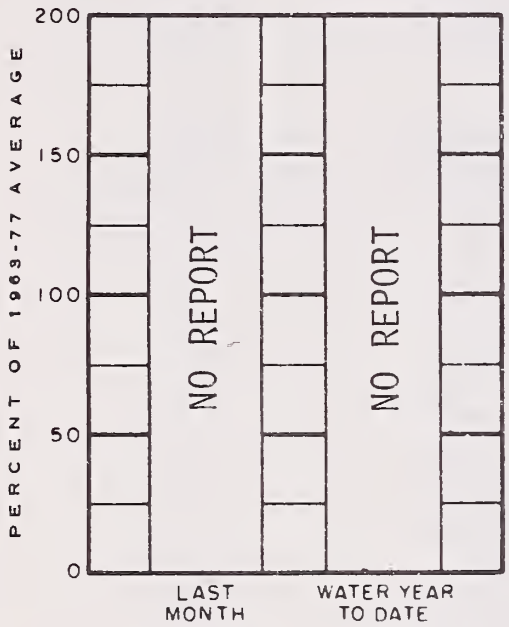
Owyhee Lake net inflow



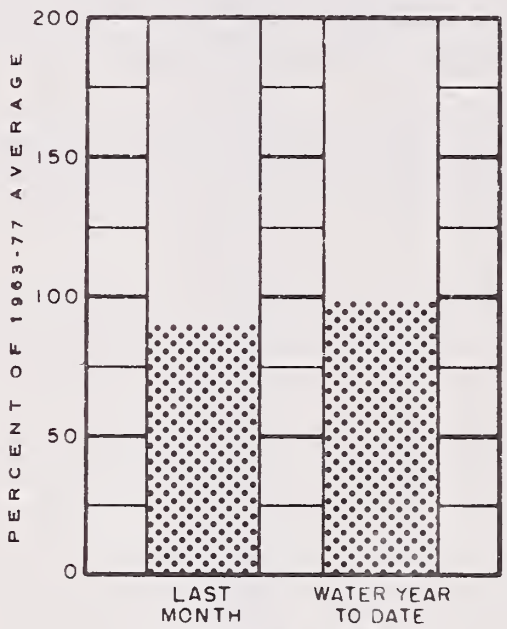
Grande Ronde at La Grande



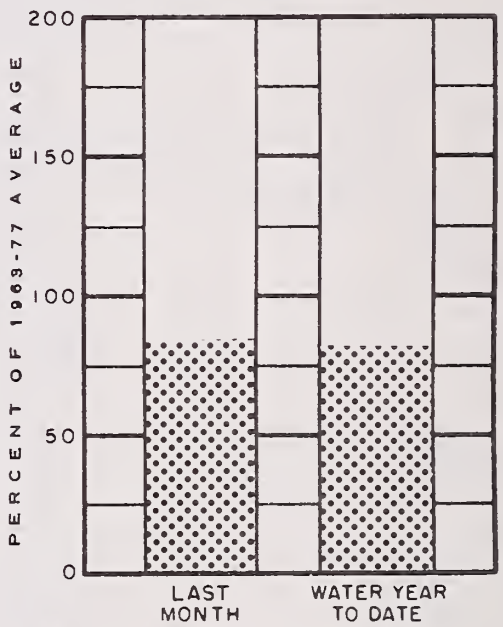
Chewaucan nr. Paisley



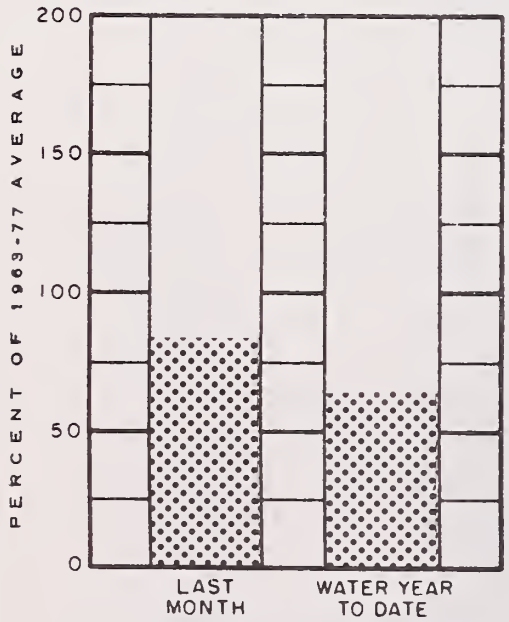
John Day at Service Creek



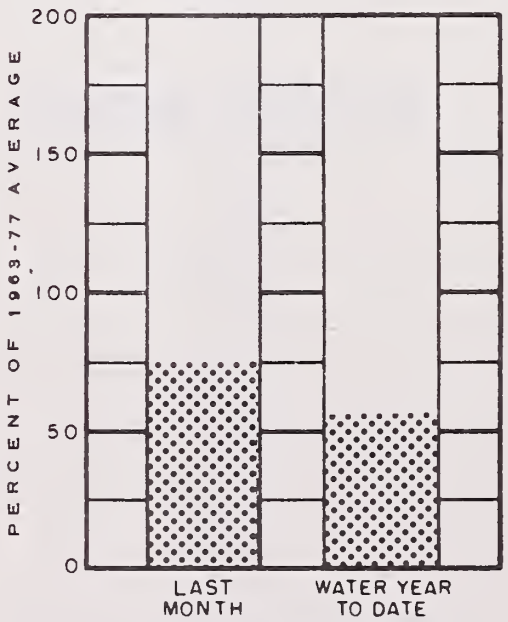
Deschutes at Moody



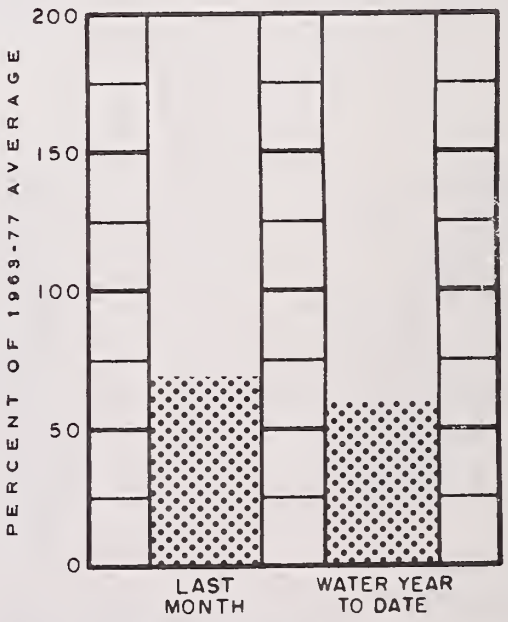
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.; and North and South Boards of Control Owyhee Project.

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

Idaho Cooperative Snow Surveys
Nevada Cooperative Snow Surveys
Oregon State University
Oregon Department of Water Resources
Soil and Water Conservation Districts of Oregon

COUNTY

Douglas County Water Resources Survey

FEDERAL

Department of Agriculture
- *Cooperative Extension Service*
- *Forest Service*
- *Soil Conservation Service*

Department of Army
- *Corps of Engineers*

Department of Commerce
- *NOAA, National Weather Service*

Department of Energy
- *Bonneville Power Administration*

Department of the Interior
- *Bureau of Land Management*
- *Fish and Wildlife Service*
- *Geological Survey*
- *Bureau of Reclamation*

PUBLIC UTILITIES

Pacific Power and Light Company
Portland General Electric Company
California-Pacific National

MUNICIPALITIES

City of Baker
City of La Grande
City of Portland
City of The Dalles
City of Walla Walla

IRRIGATION DISTRICTS

Arnold Irrigation District
Associated Ditch Companies
Burnt River Irrigation District
Central Oregon Irrigation District
East Fork Irrigation District
Grants Pass Irrigation District
Hood River Irrigation District
Jordan Valley Irrigation District
Juniper Flat Irrigation District
Lakeview Water Users, Incorporated
Medford Irrigation District
Middle Fork Irrigation District
North Board of Control - Owyhee Project
Ochoco Irrigation District
Rogue River Valley Irrigation District
South Board of Control - Owyhee Project
Squaw Creek Irrigation District
Talent Irrigation District
Tumalo Project
Vale - Oregon Irrigation District
Warmsprings Irrigation District

PRIVATE ORGANIZATIONS

The Crag Rats, Hood River, Oregon

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